

REMARKS

Claims

Applicants have amended independent claims 1 and 4 and added dependent claims 13-16. The changes to the independent claims clarify the transmission medium of the content received at the edge node, i.e., the “satellite broadcast content distribution network” and incorporate a “terrestrial communication link to the NOC” from the edge node. Figure 1 of Applicants’ specification shows this link, referred to as back channel (BC) 600. As stated on page 16 of Applicants’ specification, “BC 600 provides a terrestrial communication link between NOC 300 and EN [edge node] 500.”

Newly added claims 13-16 disclose the edge node’s serving content in response to a user request directed to the edge by an Internet Redirection Engine (IRE). The basis for these claims can be found on pages 46-49 of Applicants’ specification which describe how a user’s request for content is redirected to an edge node. The following passage from page 48 of Applicants’ specification summarizes the process as follows:

“With these two pieces of information, the IRE process can search for the EN [edge node] or EN server closest to the user which contains the content file that the user requires. Ideally, this will turn out to be an EN or EN server co-located with or directly connected to the user’s ISP or LMSP (e.g., EN 500A for user A, EN 500B for user B, EN 500C for user C as shown in Figure 2). The IRE program then commands the user’s browser to request, via an LMSP, streaming of the content file from the determined edge node or edge node server.”

None of the prior art cited by the Examiner, namely Headings (U.S. Patent Publication No. 2002/0083006), Lahr (U.S. Patent Publication No. 2001/0029525), and Taylor (U.S. Patent Publication No. 2002/0065919) disclose a system for delivering multimedia content via satellite broadcast network with this combination of the presently

invented edge node, NOC, terrestrial link between edge node and NOC, and an IRE. Headings process for delivering content is shown in his Figures 15-17 and described in his paragraphs 0055-0057. There is no redirection of the user's request to his "rack D", which the Examiner equates as similar to Applicants' edge node. Lahr also doesn't disclose an IRE, Instead Lahr's network sends user requests directly to the media server as follows, "The [user] request can include the customer's name and account information, the stream name to be published (i.e., distributed) and the IP address and port of the encoder or media server from which the stream can be pulled." (Lahr, paragraph 0044). Finally, Taylor (U.S. Patent Publication No. 2002/0065919) discusses neither satellite delivery of content nor edge nodes.

Double Patenting

The Examiner has rejected claims 1-3 on a provisional basis under the doctrine of double patenting over claim 1 of copending Application No. 09/960,605. [SHOULD I MENTION THAT WE ARE NO LONGER PURSUING '605?] Although Applicants do not agree with the Examiner's conclusion, to advance prosecution, they are willing to file a terminal disclaimer at the appropriate time to overcome the Examiner's provisional double patent rejection.

Section 112 Rejections

The Examiner has rejected claims 1-12 under Section 112 "as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention." In particular, claims 1 and 4 were rejected for

lacking proper antecedent basis for “the satellite link”. The current amendments to these limitations in claims 1 and 4 now include the phrase “satellite broadcast content distribution network” as also stated in the preambles of the respective claims. Therefore, Applicants submit that the Section 112 rejection has been resolved.

Section 102 Rejections

The Examiner has rejected Claims 4, 6, 8, 10, and 12 under Section 102 (e) as being anticipated by Headings et al, (U.S. Patent Publication No. 2002/0083006).

Applicants have attached a declaration from Philip Lausier, one of the named inventors, showing evidence that Applicants conceived the invention prior to the filing date of provisional application No. 60/255,750 filed on December 14, 2000.

Therefore, Applicants respectfully submit that Headings is not prior art to the claimed inventions.

At the same time, Applicants respectfully disagree with the Examiner’s analysis of Headings. As stated in MPEP § 2131, “To anticipate a claim, the reference must teach every element of the claim.” Headings’ edge node does not meet this requirement.

In particular, Headings’ edge node does not disclose that “the processor, satellite interface, and wire network interface exist in a single computer”. Figures 2 and 14 of Headings show rack D as Headings’ edge node. Both are comprised of multiple components, specifically of a media server farm in Figure 2 and a switch, load balancer power module, and content storage in Figure 14. There is no disclosure in paragraph 0038 or anywhere else in the text suggesting that these components exist in a single

personal computer. Furthermore, the Examiner acknowledges later that “Headings does not explicitly disclose that the media server, private VLAN, and public VLAN exist in a single computer. Clearly then, the media farm of Figure 2 and the components of Figure 14, by the Examiner’s own statement cannot be construed as anticipating Applicants’ incorporation of all edge node elements into a single disclosure.

Unlike Applicants, Headings only describes the accommodation of the components of his edge node on an equipment rack, Rack D, as used in his specification. By contrast, the following passage from pages 52-53 of Applicants’ specification shows how an edge node can be accommodated in a single personal computer:

“An EN [edge node] designed to provide content to a small number of users (e.g., 500 or less subscribers) might have a similar configuration but differ by having only a single media server. Such an EN may be implemented in a single box using a single PC or workstation rather than the rack described above. The PC or workstation may be, for example, a Dell PowerEdge running Windows 2000 or a Power Macintosh G4 running OS X Server running media server software such as Real’s RealServer or Microsoft’s Windows Media Server. The PC or workstation may contain a network interface card, such as a gigabit Ethernet card, for connecting to the LMSP and a card implementing the functionality described above for receiving DVB packets via satellite dish. For example, the Sky2PC from Digitra Systems may be used as a satellite interface card. Like the rack configuration, the single box implementation could serve content files, streaming media, or both.”

Because Headings does not disclose the existence of his edge node (“rack D”) elements in a single computer and gives no guidance comparable to Applicants’ disclosure cited above as to how to implement his “rack D” on a single computer, Applicants respectfully submit that Headings does not anticipate Applicants claim 4. Furthermore, because claims 6, 8, 10, and 12 depend from claim 4, they include the same limitations as claim 4, and therefore, were also not anticipated by Headings.

The Examiner has also rejected claims 4, 6, 8, 10, and 12 under Section 102 (e) as being anticipated by Lahr, (U.S. Patent Publication No. 2001/0029525).

With respect to claim 4, the Examiner asserts that:

“Lahr discloses an edge node that receives content from a Network Operations Center (NOC) via a satellite content distribution network and distributes it to a last mile service provider, the edge node comprising:
a processor that executes for serving both live and non-live content [Figure 8/0027].
a satellite interface, connected to the processor, that receives content from the satellite link [Figure 2/ Figure 4/0020, 0023].
a wire network interface, connected to the processor, for transmitting content to the last mile service provider [Figure 2/0020,0023].
where the processor, satellite interface, and wire network interface exist in a single personal computer [Figure 3/0020, 0023: the edge device connected to both the satellite interface and wire network such as the Internet].”

Applicants respectfully disagree with the Examiner’s analysis of Lahr. As with Headings, Lahr does not disclose all of his elements as existing in a single personal computer. Paragraphs 0020 and 0023 of Lahr recite descriptions of Lahr’s system and name the various elements including “media serving systems 14”, which the Examiner apparently believes are similar to Applicants’ edge nodes. Lahr does not disclose the enclosures for these components. In fact, Lahr’s paragraph 0027 and Figure 3 describe his media serving system in more detail. According to paragraph 0027, Lahr’s media serving system includes a central processing unit 42, a local storage device 44, a file transport module 136, a transport receiver 144 and preferably an HTTP/Proxy server 46, a Real Server 48, a QT server 50, and a WMS server 52. There is no mention of accommodating these many different components in a single computer.

Because Lahr does not disclose the accommodation of all of his components in a single computer, it did not anticipate Applicants’ inventions. Therefore,

Applicants respectfully submit that this Section 102 objection to claim 4 has been overcome. Furthermore, because claims 6, 8, 10, and 12 depend from claim 4, they include the same limitations as claim 4, and therefore, are also not anticipated by Lahr.

Section 103 Rejections

The Examiner has rejected claims 1-3, 5, 7, 9, and 11 under Section 103(a) as being unpatentable over Headings. Headings is not prior art. As stated above and in the accompanying declaration, Applicants conceived the present invention prior to the filing of Headings' provisional application. Consequently, Headings is not prior art to the claimed inventions .

Nevertheless, Applicants' respectfully disagree with the Examiner's analysis. In rejecting claim 1, the Examiner states, "Headings does not explicitly disclose that the media server, private VLAN, and public VLAN exist in a single computer. However, Headings seems to suggest such functionality." By his own statement that Headings "seems to suggest such functionality", the Examiner has already cast doubt on his own conclusion: either Headings does or does not suggest the inclusion of these components in a single computers. Applicants believe that Headings does not for the following reasons. Headings' Figure 14 and text present these components as being housed in rack D. Paragraph 0049 states that rack D includes "a file repository," "at least one media server, preferably a plurality of media servers situated in a media farm," and preferably includes "ad content storage". Paragraph 53 adds, "As shown in rack D and explained above, media server 1-4 are connected to a load balancer" and also "Terminal servers/modem hardware is preferably installed in rack D." Figure 14 also

shows two separate gigabit switches and a “Tserv/modem power module” as also being in rack D. An equipment rack is a standard piece of equipment used to contain several separate pieces of hardware in one location. It does not enable the consolidation of that equipment into a single computer, nor is it a single computer itself. Headings never discloses or suggests that a plurality of media servers, content storage, ad content storage, switches, load balancer and power module can be accommodated in a single personal computer or even a single rack. The explicit inclusion of rack D indicates that Headings’ hardware can not be accommodated in a single computer.

Furthermore, Headings suggests no motivation to accommodate his hardware in a single computer. Applicants’ motive is stated clearly on page 52 of Applicants’ specification, “An EN (edge node) designed to provide content to a small number of users (e.g, 500 or less subscribers) might have a similar configuration but differ by having only a single media server. Such an EN may be implemented in a single box using a single PC or workstation rather the rack described above.” In fact, the preferable inclusion of a plurality of media servers teaches away from the accommodation of these elements in a single computer. MPEP § 2141.02 states “Prior art must be considered in its entirety, including disclosures that teach away from the claims.”

Lastly, the Examiner refers to *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893) stating that the implementation is “merely a *design choice*, and does not provide any patentable distinction over prior art references as it has been held that forming in one piece an article which as formerly been formed in two pieces and put together only involves routine skill in the art.” This case from 1893 refers to the flange

of a stove pipe, not the integration and redesign of many pieces of sophisticated electronics. Consequently the case is not on point for the present invention.

Therefore, for the reasons above, Applicants respectfully submit that the Examiner's rejection of claim 1 under Section 103(a) over Headings was in error, and should be withdrawn. Because claims 2, 3, 5, 7, and 9 depend from claim 1, they include the same limitations as claim 1, and the rejection of these claims under Section 103(a) over Headings should also be withdrawn.

The Examiner has also rejected claim 1 under Section 103(a) as being unpatentable over Lahr. Applicants respectfully disagree with the Examiner's analysis of Lahr.

The Examiner states that Lahr disclose an edge node comprising "a private Virtual Local Area Network (VLAN) that receives content from the satellite link and distributes it to the media server [0020: 'private network']". Lahr's private network is on the transmitting end of the satellite link, unlike Applicant's edge node which is on the receiving end. Lahr states: "With references to FIG. 2, a system 10 is provided which captures media (e.g. using a private network), and broadcasts the media (e.g. by satellite) to servers located at the edge of the Internet, that is, where users 20 connect to the Internet such as at a local Internet service provider or ISP." (Lahr, para. 20, emphasis added). Because Lahr's private network captures private media for broadcast by satellite, it cannot be part of an edge node receiving content from a satellite link.

Lahr does not disclose or suggest any LAN, virtual and/or private, that receives content from a satellite link at the edge of his network. His sole reference to a LAN is for delivery of content from, not to the media servers stated as follows: "The tiers

116, 118, and 120 provide serving functions (e.g., transcoding from RTP to MMS, RealNet, HTTP, WAP or other protocol), as well as delivery via a local area network (LAN), the Internet, a wireless network or other network to user devices 122 for rendering (e.g., PCs, workstations, set-top boxes such as for cable, WebTV, DTV, and so on, telephony devices, and the like).” (Lahr, para 35, emphasis added). This indicates that the LAN delivers the content to the end users, not the media servers.

It is not on the inbound, content delivery side of the media servers as Applicants’ private VLAN. It is also not a component of a singular network element such as Applicants’ edge node. Instead, it is a connecting network, comparable to a wireless network for delivering content to the users in Lahr’s network. By contrast, the private VLAN of currently amended claim 1 is an internal network of hardware resources on the receiving side of the media server. There are no external components.

The Examiner also states that Lahr’s edge node comprises “a public VLAN that transmits the received content from the server to a last mile service provider [0020,0022: Lahr’s use of the internet is comparable to a public VLAN].” The internet is not a public VLAN. As defined by Webopedia (www.webopedia.com), a VLAN is “a network of computers that behave as if they are connected to the same wire even though they may actually be physically located on different segments of a LAN” as compared to the Internet, defined as “a global network connecting millions of computers.” The advantage of a public VLAN is that all elements of the public VLAN can be configured securely by software. Without a VLAN or similar connectivity, the Internet does not provide such security or configurability.

The Examiner also states “the media server is connected to both the public and private VLANs [Figure 8/0020, 0041, 0042].” This is not physically possible because, as stated above, Lahr’s private network is on the transmitting end of the satellite link, while the media server is on the receiving end of the satellite link.

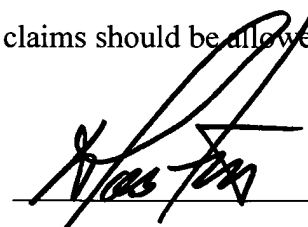
It is also not possible for Lahr to suggest these components existing in a single computer because of the physical separation between them as opposite ends of a satellite transmission system. By having his private network on the transmitting end of the satellite link and the edge node at the receiver, up to thousands of miles away, Lahr teaches away from the private VLAN and the media server existing in a single computer. Applicants’ reiterate MPEP § 2141.02 which states “Prior art must be considered in its entirety, including disclosures that teach away from the claims.”

Finally, the Examiner again refers to *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). As discussed above, this case is not relevant to the present invention. Therefore, for the reasons above, Applicants respectfully submit that the Examiner’s rejection of claim 1 under Section 103(a) over Lahr was in error, and should be withdrawn.

Conclusion

For the foregoing reasons, Applicants submit that the Examiner’s rejection of the claimed invention was incorrect and the claims should be allowed.

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